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FARM SCIENCE AND BUSINESS NEWS - NO. 3

A radio talk by M. S. Eisenhower, Director of Information, delivered Wednesday, May 25, [1932] in the Department of Agriculture Period, National Farm and Home Hour, Broadcast by a Network of 49 Associate NBC Radio Stations.

This morning, when I started to choose the material to send you in this discussion of farm science and business news, I was struck by the number of items of information about fruits and vegetables that have come this week from the economists and scientists.

Of course, that's true nearly every week. Shifts and changes are taking place in the fruit and vegetable industry almost every day. For instance, the economists this week announced that carlot shipments of fruits and vegetables have fallen off in the last two years. But this does not necessarily mean that we are growing and selling less fruits and vegetables. Rather, it means that the railroads and the boats have lost some of the business of transporting these commodities, while trucks have been hauling more.

There's constant change, too, in the growing methods, the varieties, and the insect-pest-control methods followed by growers of fruits and vegetables. The 1932 Yearbook of Agriculture announces -- By the way, I don't think I've told you that the new Yearbook is now off the press. This year's edition is condensed and compact, giving some of the year's results of Department research and service work, and the more important agricultural statistics. Members of Congress have a limited number of copies of the Yearbook for distribution. Naturally they aim to send it only to persons who can make good use of it in their business. If you need it, I'm sure your Congressman or Senator will do his best to get a copy for you.

Well, as I started to say a moment ago about changes in the fruit and vegetable industry, the Yearbook announces that this year for the first time there is commercially available seed of a new variety of early cabbage and seed of a new variety of early tomato, both of which were developed by Department plant breeders. These varieties are disease-resistant. Probably some of you already have set some of these plants. The tomato is the Break O'Day. Mr. Beattie has often told you about the progress of the experiments and test plantings. The only additional thing I'm telling you now is that the seed is commercially available. This Break O'Day tomato resists Fusarium wilt of vines and nailhead rust of fruits. It's also slightly resistant to blights.

The new early cabbage variety is the Jersey Queen. It is resistant to the yellows disease. In fact, it is really a yellows-resistant strain of Jersey Wakefield. I want to tell you just a little about the research work back of this new cabbage variety -- a story that is told in the new Yearbook by J. C. Walker, the plant breeder who originated this variety. It's a story that illustrates the patience required of the modern plant breeder. Ninety-five out of 100 jersey Wakefield plants grown in yellows-infested soil will die. Dr. Walker selected the best plants from the surviving 5 out of every hundred. He kept on selecting and selecting until he got a strain of cabbage that would resist the disease. But even then his work wasn't done. For three years he selected pure strains of the resistant variety that would compare in type with the best of the Jersey Wakefield. Then the variety had to be tried out under different conditions. This year the tests are finished, and seed has been sold commercially this spring. So again the scientist has triumphed over a disease, a triumph that will benefit cabbage producers.

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Also in this new Yearbook are reports that show the progress on the insect battlefronts of the horticultural industries. A most interesting thing to me is the way the entomologists set insect against insect, inducing parasites to prey on and control their brother bugs. Some accomplishments in this line of work are reported by men engaged in fighting the gipsy moth, the brown-tail moth, the Japanese beetle, and the oriental fruit moth. The gipsy moth population in the New England area has been tending downward, while the population of parasites has been tending upward -- a case of insects controlling insects. And, by the way, the Department entomologists and plant quarantine men are able to report apparent success in the eradication of gipsy moths from New Jersey. The last live moth was found there in 1929. The men trying to introduce parasites of the Japanese beetle say that two species of the imported parasites show promise of helping control this devastating pest. The entomologists have, of course, developed other mehtods of fighting the Jap beetle. Previously they have worked out protection for tree foliage by sprays, protection for lawns by bug-proofing poison applications, traps for the beetles, and methods of treating nursery stock and fruits and vegetables so that they may be shipped with perfect safety from the infested areas. Last year's new development was a dust treatment to apply to sweet corn at the silking stage. The treatment keeps the beetles from eating the silks -- of which they're very fond -- and this protects the corn crop.

And finally for today, an encouraging report about the oriental fruit moth. Parasites have already brought down the severity of damage by the moth. In the early years of its infestation, it frequently caused 50 per cent of the fruit to be wormy. In the last 3 years not more than 10 per cent, and in some peach orchards less than 3 per cent, of the fruit has been damaged by the moth. Entomologists are now trying to work out ways of increasing the effectiveness of the parasites that destroy the moth. Again, a case of insect against insect.

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FARM SCIENCE AND BUSINESS NEWS - NO. 4

A radio talk by M. S. Eisenhower, Director of Information, delivered Friday, June 3, in the Department of Agriculture period, National Farm and Home Hour, broadcast by a network of 48 associate NBC radio stations.
[1932]

Hello everyone!

Today, let's take off our hats to Idaho. Just two days ago, our Bureau of Animal Industry announced that all the cattle herds of that State are practically free from tuberculosis. And thus Idaho becomes the first State west of the Mississippi to be placed on the honor roll. It's the seventh State in the Union to become accredited, the others being Maine, North Carolina, Michigan, Indiana, Wisconsin, and Ohio.

Cooperative tuberculosis eradication began in Idaho in 1918 on an individual herd basis. Then in 1922 the State and Federal Governments took up the work on the county-wide plan in cooperation with county officials and cattle owners. In all, about 900,000 cattle received the tuberculin test, resulting in the slaughtering of 4,500 reactors. The inspectors did all this work of testing at a time most convenient to the cattle owners - when the cattle were not on the open range, but were more or less confined.

Now, what does this mean to the folks in Idaho? First of all, there's the human benefit. Consumers can use milk in a State free of tuberculosis with confidence. It also means that there's a better market for Idaho cattle. Increased demand means better prices. Herds become more productive. The movement of feeders is facilitated.

The organized, nation-wide battle against bovine tuberculosis began back in 1917. At that time about 5 per cent of all our cattle were infected with tuberculosis. I have before me now a strictly up-to-the-minute map that shows the present infection in all counties of the United States. It shows that today only 1.4 per cent of the cattle in this country are infected, and I notice, in glancing over the map, that in most counties the infection is less than 1 per cent. A few counties with extraordinarily high infection - running up to 15 and 20 per cent - bring the average for the country as a whole up to 1.4. Since this gigantic task started, county, State, and Federal men have tested more than 88,000,000 cattle - a task that is bringing tremendous advantages to livestock men - and to all of us. This is, by the way, the only large country of the world that is making a determined effort to stamp out bovine tuberculosis.

The past record of our people and our scientists gives us every reason to believe that they're going to succeed in stamping out tuberculosis in all sections of the country. The Bureau of Animal Industry leads the fight. It has the help of State officials and progressive stockmen.

The other day I was looking over a list of a few of the older victories of this team. Scientists of the bureau and cooperating agencies led the way

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to complete eradication of contagious pleuro-pneumonia; to the diagnosis and practical eradication of dourine in horses. They stamped out foot-and-mouth disease every time it appeared in this country. One of these veteran scientists made a fundamental discovery that saved the hog industry of this country - the discovery that hog cholera is caused by a filterable virus. These animal scientists, in the course of their investigations, discovered an effective remedy for hookworm; 4 1/2 million human victims of this parasite have benefited from the discovery. And then there's the epochal discovery that every eighth-grade school kid learns about in his physiology courses - the discovery that certain infectious diseases are transmitted from subject to subject by an intermediate host. This discovery makes it possible to eradicate tick fever in cattle. It makes it possible to control malaria fever, yellow fever, and similar diseases. And, incidentally, without a method of controlling yellow fever, we could never have built the Panama Canal.

Now, all this remarkable progress in control and eradication of livestock diseases has taken place through the application of science. The discoveries are made in the laboratories and put into effect upon the farm, in hospitals, and in the home.

A moment ago I told you that the Bureau of Animal Industry has stamped out foot-and mouth disease on every occasion it has appeared in this country. I think I am correct in saying that this is the only great livestock country in the world free of this terrible disease. But only six weeks ago an outbreak occurred in California. That outbreak was an electric signal to State and Federal officials. The inspector who was chosen to direct the work of eradication took an airplane to the infested area, marshalled his forces, and went to work. In exactly 10 days the Federal and State workers eliminated the last visible trace of foot-and-mouth disease. They did their work so quickly and effectively that the livestock industry in California scarcely felt a ripple. And, incidentally, they established a new record. When foot-and-mouth disease appeared in this country in 1914 it required more than a year's hard work to get rid of it. In 1919 it took 31 days. Now we've apparently run up a 10-day record. This is a triumph of science, organization, and education - I add education becuase the livestock folks of this country have come to appreciate how vitally important it is to them to keep this disease outside our borders.

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FARM BUSINESS AND SCIENCE NEWS

A radio talk by C. E. Gapen, Chief of the Press Service, delivered in the Department of Agriculture period, National Farm and Home Hour, Friday, August 26, 1932, by a network of 48 associate NBC radio stations.

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I hope everybody is listening.

In his Garden Calendar talks, W. R. Beattie told you recently about new varieties of tomatoes and cabbage now available to gardeners as the result of work by Walker, Pritchard, and other scientists. No doubt, Mr. Beattie will tell you later about new varieties of potatoes and strawberries and lettuce that resist diseases or give higher yields; these, too, have resulted from patient work by plant breeders of the Department of Agriculture.

I'm going to tell you about a few recent results by department plant breeders who are working with grain and fiber and sugar crop plants. I have some facts about the new varieties and strains of corn, oats, wheat, flax, sugar beets, and sugar cane made available to growers as a result of years of work by the department plant breeders.

The corn breeding program, carried on in cooperation with the Iowa Agricultural Experiment Station, has produced several crosses that have improved Iowa corn yields. In each of the 12 districts of the corn yield test, the crosses developed by the corn breeders outyielded the best open-pollinated varieties. The average increase in yield of the crossed seed over the open-pollinated seed was nearly 1/7th.

Out in the Great Plains region, you who grow oats will be trying --if you haven't already -- a new variety named Brunker, B-R-U-N-K-E-R. This variety originated in cooperative experiments at the Akron, Colorado, Field Station as a selection from the Burt oat. Brunker is proving promising throughout the central spring-sown, red oat region. It is very early, uniform, and awnless, and as I've inferred, is of the red-kerneled type.

The plant breeders working to improve hard red spring wheat varieties are reporting success in the first trials of the hybrids which they have developed from crosses of the Hope varieties with the best commercial varieties such as Ceres, Marquis, and Reliance. Some selections from these crosses have been entirely free from rust in every test, and in addition have resisted stinking smut.

Perhaps most flax growers know about Bison, the new wilt-resistant variety selected and distributed by the North Dakota Agricultural Experiment Station. I hear that the acreage of Bison has already gone above 250,000.

I doubt that I need to tell many Western sugar beet growers that we shall soon know whether the years of effort to develop strains of sugar beets resistant to the destructive curly top disease have ended with success. This year, cooperating growers and scientists are carrying out extensive field trials of the re-

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sistant stock to see if the new strains will be immune to this disease under field conditions, and at the same time will produce enough sugar to be commercially successful.

You other sugar growers in Louisiana, who produce sugar cane, are renewing your confidence in the business since the department introduced varieties resistant to the devastating mosaic disease.

Let me say that if any of you want to get complete and accurate information on new varieties of crops and fruits and vegetables best adapted to your conditions, the best man to consult is your county agricultural agent.

I still have two or three minutes. This is time enough to report on the progress made by plant disease fighters in three of the campaigns being carried on to stamp out two serious diseases -- phony peach disease, and stem rust of small grains.

The plant disease fighters have now completed the third year of their campaign to eradicate the phony disease of peach and nectarine trees. They report that this campaign is succeeding.

As F. C. Meier has told you in Farm and Home Hour talks, the plant disease fighters attacking stem rust of wheat and other small grains have destroyed millions of barberry bushes in the past 10 years. Each bush destroyed decreases the danger of stem rust epidemics. The bushes are intermediate hosts of the minute fungi that cause the stem rust disease. When you destroy the bushes you leave the fungi homeless and exposed. They cannot live. The results of the campaign to eradicate barberry bushes show up in the statistics of the average annual loss of wheat caused by stem rust. In each year from 1916 to 1920 the average loss was 57 million bushels. Then these millions of barberry bushes were destroyed. In each year from 1926 to 1930, the average annual loss of wheat due to stem rust was less than 10 million bushels.

There should be a full attendance of Farm and Home Hour listeners at next Friday's program. You will hear from the soybean scientists of the nation a most interesting and important farm business and science news report on how industry is using the soybean, and how large-scale producers are growing the soybean. You know America now grows about 3,500,000 acres of this crop.

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AGRICULTURAL ECONOMICS
U. S. DEPARTMENT OF AGRICULTURE

FARM SCIENCE AND BUSINESS NEWS NO. 7

A Radio Talk by M. S. Eisenhower, Director of Information, Delivered Friday, December 30, 1932, in the Department of Agriculture Period, National Farm and Home Hour, and Broadcast by a Network of 48 Associate NBC Radio Stations.

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Hello, everyone.

In his annual report to the President, Secretary Hyde points out that the results of scientific research, when put into operation on the farm, or in the processing plant, help agriculture in five distinct ways. First, they reduce costs of production. Second, they widen markets and reduce wastes in distribution. Third, they open new uses for farm products and by-products. Fourth, they help adjust production to demand. And fifth, they improve the quality of farm products.

I'm going to tell you today about the progress recently made in four lines of research, all of which aim ultimately to reduce the costs of farm production. One line of research has to do with producing new and more efficient poisons to control insects. Another has to do with producing wheat varieties that will resist rust disease and also give good yields. Still another has to do with conquering rust disease by removing one of the plants, besides wheat, that it lives on. And, finally, one has to do with handling sheep flocks so as to make them produce the maximum amount of clean wool per fleece.

Now here just let me remark that the aim of science is not to increase total production. Rather, it is to increase production per unit and thus cut down costs. It's perfectly obvious, I think, that science cannot regulate the size of the agricultural plant, but it can and does help reduce the cost of operating the plant. In farming as in other industries, science is more necessary when prices fall than when prices rise, because the cost of production becomes increasingly important.

Well, now, back to our report of research findings in these four lines. The wool fiber technologists of the Department are trying to find a measuring stick to help sheep breeders build up flocks that will produce dense, heavy-shearing, light-shrinking fleeces. The first thing they have been after is a test that will enable the breeder to pick out the animals of his flock that produce such fleeces. Well, they've now found the method of picking out the animals. It's quite simple. They just shear a swath of wool from the side of the sheep. They weigh the sample, then put it through the ordinary dry-cleaning process, and weigh it again. From these weights they can compute the percentage of yield of dry, clean wool in the fleece of the sheep. This information is of practical value in selecting breeding animals.

Scientists working at the problem of finding new and better poisons to kill insects have come another step on the road to their goal of economical control of pests. Doctor Knight told you some three months ago about the experiments with rotenone - a poison derived from the roots of tropical plants; a poison that

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kills either sucking or biting insects, but that isn't harmful to man; a poison that holds some promise of overcoming the serious spray residue problem. Doctor Knight commented at the time that we needed cheaper sources of rotenone. Now the insecticide experts have found another source - rotenone is contained devil's shoestring, a common weed in the eastern half of the United States. The discovery of rotenone in this American plant promises to make the United States independent of foreign sources for insecticides made of rotenone.

Here are the two stories of progress in the fight on rust of wheat. For years scientists have been originating varieties of wheat that resist rust. Now comes the announcement that varieties not only resistant but actually immune to rust are a possibility. The past year's experiments have proved that near-immunity from rust is a plant character definitely inherited in wheat crosses. Of course scientists will have to go a long way before they can breed this near-immunity into all wheat sown by farmers. They must cross near-immune varieties with resistant and susceptible ones that have all the other desirable characters, such as high yield, good milling and baking quality, resistance to hot weather, drought, and diseases other than rust. But the knowledge that near-immunity is an hereditary character and not merely a growth or plant condition is of tremendous importance in wheat improvement.

Finally, I can report to you today the reason why rust attacked durum wheat in parts of Minnesota and the Dakotas this past year. Farmers had thought durum wheat to be proof against rust attack. Naturally, therefore, they were much dismayed by the outbreaks of the disease this past season. Our scientists say that durum is proof against attacks of most kinds of rust - of all the kinds ordinarily present in the Northwest. But this past summer vagrant winds brought up from Mexico new strains of the little organisms that cause rust disease. Durum was not proof against this new kind of rust and here and there fields were harmed by the disease. It took exceptional weather conditions to bring the rust spores all the way from Mexico to the Northern Plains. But now that the new form of rust has reached the Plains, the danger is that it will overwinter in the stubble, find a spring breeding ground on barberry bushes, and stay as a plague of durum wheat. The remedy, of course, is to eradicate the barberry bushes.

So there are this week's four reports of progress in agricultural science - the discovery of the reason why rust attacked durum wheat last summer; the fundamental discovery that near-immunity to stem rust can be bred into wheat varieties; the discovery that devil's shoestring, a common weed of the eastern United States, contains the valuable insect poison rotenone; and the discovery of a practical method of picking out breeding sheep yielding a high percentage of clean wool to the fleece.

And now, let me wish all of you a most happy New Year.

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